We claim:-

1. A process for the preparation of a 2,2'-dihydroxybiphenyl by oxidative coupling of two phenol molecules which have a hydrogen atom in an o-position by means of a peroxide in the presence of water at from 0 to 100°C, wherein the preparation is carried out in the presence of a water-insoluble polymer, comprising

   a) from 0.1 to 99.9% by weight of at least one vinyl heterocycle
   b) from 0.1 to 10% by weight of at least one difunctional crosslinking component
   c) from 0 to 99.8% by weight of styrene or at least one monounsaturated styrene derivative or a mixture thereof,

   the stated percentages by weight of the individual components a), b) and c) summing to 100%.

2. A process for the preparation of a 2,2'-dihydroxybiphenyl by oxidative coupling of two phenol molecules which have a hydrogen atom in an o-position by means of a peroxide in the presence of water at from 0 to 100°C, wherein the preparation is carried out in the presence of a water-insoluble polymer, comprising

   a) from 0 to less than 100% by weight of at least one vinyl heterocycle
   b) from 0 to 10% by weight of at least one difunctional crosslinking component
   c) from 0 to less than 100% by weight of styrene or at least one monounsaturated styrene derivative or a mixture thereof
   d) from 0 to 100% by weight of at least one N-vinylamide of an aliphatic carboxylic acid, or of the monomers obtained by partial or complete hydrolysis of said amido group
   e) from 0 to 100% by weight of at least one vinylcarboxylic acid or its esters, amides or salts or of the monomers obtained by partial or complete hydrolysis of said amido group or ester group, with the proviso that
   the content of compound d) is more than 0% by weight or
   the content of compound e) is more than 0% by weight or
   the content both of compound d) and of compound e) is more than 0% by weight,

   the stated percentages by weight of the individual components a), b), c), d) and e) summing to 100%.

3. A process according to claim 1 or 2, the process being carried out at from 15 to 50°C.

4. A process according to any of claims 1 to 3, an inorganic peroxide being used as the peroxide.

5. A process according to any of claims 1 to 3, a persulfate anion being used as the peroxide.

6. A process according to claim 5, the persulfate anion being used in the presence of an ammonium, sodium or potassium cation.

7. A process according to any of claims 1 to 6, the reaction being carried out in the presence of amounts of iron or of an iron compound which are suitable as catalyst.

8. A process according to any of claims 1 to 7, the phenol used being 2,4-dimethylphenol, and the 2,2'-dihydroxybiphenyl obtained being 2,2'-dihydroxy-3,3',5,5'-tetramethylbiphenyl.

9. A process according to any of claims 1 to 8, at least one N-vinyllactam or at least one N-vinylamidine or a mixture thereof being used as the vinyl heterocycle.

10. A process according to claim 9, N-vinylpyrrolidone, N-vinylpiperidone, N-vinylcaprolactam or a mixture thereof being used as the N-vinyllactam.

11. A process according to claim 9, N-vinylimidazole, N-vinyl-2-methylimidazole, N-vinyl-4-methylimidazole or a mixture thereof being used as the N-vinylamidine.

12. A process according to any of claims 1 and 3 to 11, a water-insoluble polymer comprising

a) from 0.1 to 99.9% by weight of N-vinylpyrrolidone as the vinyl heterocycle
b) from 0.1 to 10% by weight of at least one difunctional crosslinking component
c) from 0 to 99.8% by weight of styrene or at least one monounsaturated styrene derivative or a mixture thereof,

the stated percentages by weight of the individual components a), b) and c) summing to 100%,
being used.

13. A process according to any of claims 2 to 11, a water-insoluble polymer comprising

d) 100% by weight of at least one N-vinylamide of an aliphatic carboxylic acid, or of the monomers obtained by partial or complete hydrolysis of said amido group and of the formula $H_2C=CR^2NR^3C(O)R^1$, where R^1, R^2 and R^3, independently of one another, are hydrogen, C_{1-20}-alkyl, C_{1-20}-aryl or C_{1-20}-alkylaryl ,

being used.

14. A process according to any of claims 2 to 11, a water-insoluble polymer comprising

e) 100% by weight of at least one vinylcarboxylic acid or esters, amides or salts thereof or of the monomers obtained by partial or complete hydrolysis of said amido group or ester group

being used.

15. A process according to claim 13, N-vinylformamide, N-vinylacetamide, N-vinyl-N-methylacetamide, N-vinyl-N-methylformamide, acyclic amidines or mixtures thereof being used as the N-vinylamide.

16. A process according to claim 14, acrylic acid, acrylamide, C_1-C_4-alkyl acrylates, alkali metal acrylate, alkaline earth metal acrylate, methacrylic acid, methacrylamide, N-isopropylmethacrylamide, C_1-C_4-alkyl methacrylates, alkali metal methacrylate, alkaline earth metal methacrylate, maleic acid, maleic anhydride, maleimide, mono(C_1-C_4-alkyl) maleates, di(C_1-C_4-alkyl)maleates, monoalkali metal maleate, dialkali metal maleate, fumaric acid, fumaric acid monoamide, fumaric acid diamide, mono(C_1-C_4-alkyl) fumarate, di(C_1-C_4-alkyl) fumarate, monoalkali metal fumarate, dialkali metal fumarate or mixtures thereof being used as the vinylcarboxylic acid or the esters, amides or salts thereof or the monomers obtained by partial or complete hydrolysis of said amido group or ester group.

17. A process according to any of claims 1 and 3 to 16 or 2 to 16, the preparation being carried out in the presence of a polymer mixture which contains

α) a thermoplastic polymer and

β) water-insoluble polymers of vinyl heterocycles or N-vinylamides, it being possible for the N-vinylamide polymers to be partly or completely hydrolyzed to amines.

18. A process according to any of claims 1 and 3 to 16, the preparation being carried out in the presence of a polymer mixture which contains

i) from 5 to 95% by weight of at least one styrene polymer and
ii) from 5 to 95% by weight of a crosslinked or uncrosslinked poly-N-vinylpyrrolidone.

19. A process according to any of claims 2 to 16, the preparation being carried out in the presence of a polymer mixture which contains

i) from 5 to 95% by weight of at least one styrene polymer and
iii) from 5 to 95% by weight of a poly-N-vinylformamide or of a polyamine obtained by partial or complete hydrolysis of the poly-N-vinylformamide.

20. A process according to any of claims 1 and 3 to 16 or 2 to 16, the preparation being carried out in the presence of a polymer mixture which contains

ii) from 5 to 95% by weight of a crosslinked or uncrosslinked poly-N-vinylpyrrolidone and
iii) from 5 to 95% by weight of a poly-N-vinylformamide or of a polyamine obtained by partial or complete hydrolysis of the poly-N-vinylformamide.

21. A process according to any of claims 1 and 3 to 16 or 2 to 16, the preparation being carried out in the presence of a polymer mixture which contains

i) from 2 to 95% by weight of at least one styrene polymer,
ii) from 2 to 95% by weight of a crosslinked or uncrosslinked poly-N-vinylpyrrolidone and
iii) from 2 to 95% by weight of a poly-N-vinylformamide or of a polyamine obtained by partial or complete hydrolysis of the poly-N-vinylformamide,

the stated percentages by weight of the individual components i), ii) and iii) summing to 100%.